APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/733,177	12/10/2003	Robert C. Knauerhase	42P17254	8024

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EXAMINER
WILSER, MICHAEL P

ART UNIT	PAPER NUMBER
2195	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/733,177	KNAUERHASE ET AL.
	Examiner	Art Unit	
	Michael Wilser	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _10 December 2003_.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-40_ is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) _1-40_ is/are rejected.
7)☐ Claim(s) _____ is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on _10 December 2003_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
      1.☐ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _10/17/05 & 8/14/06_.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1.   Claims 1-40 are pending in this application.

Specification

2.   The use of the trademarks Linux and Microsoft Windows has been noted in this

application. It should be capitalized wherever it appears and be accompanied by the

generic terminology.

Although the use of trademarks is permissible in patent applications, the

proprietary nature of the marks should be respected and every effort made to prevent

their use in any manner which might adversely affect their validity as trademarks.

3.   The disclosure is objected to because of the following informalities: the examiner

notes the use of acronyms (e.g. BIOS, etc.) throughout the specification without first

including a description in plain text, as required.

4.   The disclosure is objected to because of the following informalities: On page 7,

line 14 the specification reads "accomplish a tack". The examiner is interpreting this as

meaning to read "accomplish a task".

On page 7, line 15 of the specifications reads "up a another". The examiner

interprets this as a typographical error and should read "up another".

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6.   Claims 1-40 are rejected under 35 U.S.C. 102(b) as being anticipated by Mori et

al. (US 2002/0013802).

7.   As per Claim 1, Mori teaches the invention substantially as claimed including a

method comprising:

a. evaluating the activity of one or more virtual machines (page 1, paragraph 17);

and

b. reallocating physical resources to the virtual machine based in part on the

evaluated activity (abstract, lines 13-14).

8.   As per Claim 2, Mori further discloses monitoring the activity of one or more

virtual machines (page 1, paragraphs 7 & 9).

9.   As per Claim 3, Mori further discloses that monitoring the activity of the virtual

machine includes monitoring one of interrupt usage, processor usage, network usage,

disk usage, and whether the virtual machine is performing a time-critical task (page 2,

paragraph 30).

10.   As per Claim 4, Mori further discloses monitoring the activity of the virtual

machine substantially in parallel with executing the virtual machine (page 2, paragraph

34).

11.   As per Claim 5, Mori further discloses reallocating resources includes either

increasing or decreasing the ability of the virtual machine to access a physical resource

(page 1, paragraph 16).

12.   As per Claim 6, Mori further discloses that reallocating physical resources

includes increasing the ability of the virtual machine to access a first resource (page 1,

paragraph 16) and decreasing the ability of the virtual machine to access a second

resource.

13.   As per Claim 7, Mori further discloses that reallocating a resource to the virtual

machine includes a reallocation selected from a group including altering the order in

which the virtual machine is executed, swapping between virtual machines, assigning

core affinity to a virtual machine, assigning a processor affinity to a virtual machine, and

altering the time quanta assigned to the virtual machine (page 1, paragraph 18).

14.   As per Claim 8, Mori further discloses reallocating physical resources is

performed by a virtual machine monitor having a resource manager to evaluate the

virtual machine activity (page 2, paragraph 36).

15.   As per Claim 9, Mori further discloses the resource manager is part of an

integrated circuit (page 2, paragraph 36).

16.   As per Claim 10, Mori further discloses evaluating the activity of the virtual

machine includes:

    a. determining whether the activity of the virtual machine is sufficient to trigger a

change in resource allocation (page 1, paragraph 10);

    b. suggesting a resource allocation (page 3, paragraph 52); and

    c. determining whether the suggested resource allocation negatively impacts the

performance of another virtual machine (page 4, paragraph 56).

17.   As per Claims 11-20, they are rejected for the same reasons as Claims 1-10

above.

18.   As per Claim 21, Mori teaches the invention substantially as claimed including a

apparatus comprising:

        a. a plurality of virtual machines, capable of sharing a plurality of physical

resources (page 2, paragraph 30);

        b. an activity monitor, capable of monitoring the activity of the virtual machines

(abstract, lines 13-14); and

        c. a virtual machine manager, capable of managing the virtual machines and

reallocating access to physical resources amongst the virtual machines, based in part

on the monitored activity (page 2, paragraph 34).

19.   As per Claim 22, Mori further discloses the virtual machine monitor includes a

resource manager that is capable of reallocating access to the physical resources

amongst the virtual machines (page 2,paragraph 36).

20.   As per Claim 23, Mori further discloses that the activity monitor is capable of

monitoring an activity selected from a group including interrupt usage, processor usage,

network usage, disk usage, and whether the virtual machine is performing a time-critical

task (page 2, paragraph 30).

21.   As per Claim 24, Mori further discloses the activity monitor is capable of

monitoring the activity of the virtual machines substantially on parallel with the execution

of the virtual machine (page 2, paragraph 34).

22.   As per Claim 25, Mori further discloses the virtual machine monitor is capable of

either increasing or decreasing the ability of the virtual machine to access to a physical

resource (page 1, paragraph 16).

23.   As per Claim 26, the virtual machine monitor is capable of reallocating resources

to the virtual machine via increasing the ability to access a first resource and decreasing

the ability to access a second resource (page 1, paragraph 16).

24.   As per Claim 27, Mori further discloses the virtual machine monitor is capable of

reallocating physical resources to the virtual machine by selecting from a group

including altering the order in which the virtual machine is executed, swapping between

virtual machines, assigning core affinity to a virtual machine, assigning a processor

affinity to a virtual machine, and altering the time quanta assigned to the virtual machine

(page 1, paragraph 18).

25.   As per Claim 28, Mori further discloses the resource manager is further capable

of evaluating the monitored activity of the virtual machine (page 1, paragraph 17).

26.   As per Claim 29, Mori further discloses the resource manager is capable of

evaluating the monitored activity of the virtual machine by:

a. determining whether the activity of the virtual machine is sufficient to trigger a change in resource allocation (page 1, paragraph 10);

b. an activity monitor, capable of monitoring the activity of the virtual machines (abstract, lines 13-14); and

c. a virtual machine manager, capable of managing the virtual machines and reallocating access to physical resources amongst the virtual machines, based in part on the monitored activity (page 2, paragraph 34).

27.   As per Claim 30, Mori further discloses the activity monitor and virtual machine monitor are integrated into the same circuit (page 2, paragraph 36).

28.   As per Claim 31-40, they are rejected for the same reasons as Claims 21-30 above.

Conclusion

29.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. Romero et al. (US 2005/0039183) System and method for allocating a plurality of resources between a plurality of computing domains.

b. Zalewski et al. (US 2002/0016892) Multiprocessor computer architecture with
multiple operating system instances and software controlled resource allocation.

Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Michael Wilser whose telephone number is (571) 270-
1689. The examiner can normally be reached on Mon-Fri 7:30-5:00 EST (Alt Fridays
Off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Meng-Ai An can be reached on (571) 272-3756. The fax phone number for
the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the
Patent Application Information Retrieval (PAIR) system. Status information for
published applications may be obtained from either Private PAIR or Public PAIR.
Status information for unpublished applications is available through Private PAIR only.
For more information about the PAIR system, see http://pair-direct.uspto.gov. Should
you have questions on access to the Private PAIR system, contact the Electronic
Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a
USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MPW
August 2, 2007

LEWIS A. BULLOCK, JR.
PRIMARY EXAMINER